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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/733,685	12/08/2000	Rebecca M. Cade	A-31089A	2712

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EXAMINER

KUBELIK, ANNE R

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 12/05/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/733,685

Applicant(s)

CADE ET AL.

Examiner

Anne R. Kubelik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-12 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-12 and 21-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. The cancellation of claims 1, 4-5 and 14-20, the amendment of claims 2-3, 6 and 12, and the addition of claims 21-28 requested in Paper No. 5, filed 26 September 2002 have been entered. Claims 21-28 belong in Group I.
2. Applicant's election without traverse of Group I (claims 1-13) and SEQ ID NOs:1 and 2 in Paper No. 5 is acknowledged. Claims 1, 4-5, 6-12 and 21-28 are pending.
3. The title of the invention is not descriptive of the instant invention. A new title is required that is clearly indicative of the invention to which the claims are directed. Note that titles can be up to 500 characters long.
4. The abstract is not descriptive of the instant invention. A new abstract is required that is clearly indicative of the invention to which the claims are directed.

#### ***Claim Objections***

5. Claims 3, 9 and 24 are objected to because they start with an improper article.

#### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1, 4-5, 6-12 and 21-28 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a nucleic acid encoding SEQ ID NO:2, does not reasonably provide enablement for a method of increasing SAR in plants by transformation with a nucleic acid encoding SEQ ID NO:2 and plants so transformed. The specification does not

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enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The claims are broadly drawn to a method of increasing SAR in plants by transformation with a nucleic acid encoding SEQ ID NO:2 and plants so transformed.

The instant specification, however, only provides guidance for isolation of NI16 (SEQ ID NO:1, which encodes SEQ ID NO:2) via a method to isolate genes that encode proteins that interact with NIM1 by using a yeast two-hybrid screen (example 1), prophetic analysis of the expression patterns of NI16 mRNA (example 2), cloning the genomic copy of the NI16 gene, SEQ ID NO:3 (example 3); transient expression of NI16 in wild-type and *nim1* mutant *Arabidopsis* to show that a high level of expression of NI16 is correlated with a high level of expression of PR-1 (example 4 and Table 2); cloning NI16 homologs from potato and tomato by PCR amplification to produce SEQ ID NOs:4 and 6, respectively (example 5), and general, prophetic guidance for the expression of NI16 in plants (pg 30-48).

It is noted that because the examples are all written in the present tense, it is difficult to determine which experiments were actually performed and which are only prophetic. In the summary of guidance above, all examples for which there is no outside support (*e.g.*, a Table showing data or a SEQ ID NO:) were assumed to be prophetic, rather than an experiment that was actually performed. Clarification would be appreciated.

The instant specification fails to provide guidance for a method of increasing SAR in plants by transformation with a nucleic acid encoding SEQ ID NO:2 and plants so transformed.

Delaney (2000, Trends Plant Sci. 5:49-51) teach that a number of different kinds of proteins interact with NPR1 and with those proteins that interact with NPR1/NIM1 (pg 49, column 3, paragraph 3, to pg 50, column 1, paragraph 1; Fig. 2). Some of these proteins are

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inhibitors of PR (pathogenesis-related) gene expression. If SEQ ID NO:3 encodes a protein that represses or otherwise inhibits PR gene expression, plants transformed with it are likely to have decreased disease resistance due to overexpression of the inhibitor protein. Additionally, even alteration of proteins known to interact with NPR1/NIM1 has no effect on induced resistance (pg 49, column 3, paragraph 3). Thus, it cannot be guaranteed that a gene encoding a protein that interacts with a protein that interacts with NPR1/NIM1 will, when transformed into a plant, produce enhanced disease resistance in that plant.

Given the unpredictability in the art and lack of guidance in the specification as discussed above, the instant invention is not enabled throughout the full scope of the claims.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 12-13 and 27-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention. Dependent claims are included in all rejections.

It is not clear in claims 12 and 27 if the transgenic seed comprises the chimeric gene of the instant invention or if they are transformed with some other nucleic acid. Note that half of the seeds from a transgenic plant will not contain the nucleic acid with which the plant was transformed.

Claims 13 and 28 are indefinite because they lack agreement between the preamble of the methods and the positive method steps. Methods must be circular; the final step must generate the item the method is intended to produce. For example, the method of increasing SAR gene

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expression in a plant in claim 13 ends in expressing a chimeric gene in a plant, when it should end in the increase in SAR gene expression in a plant.

10. Claims 13 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The methods are ones of increasing SAR gene expression in a plant, and the only method step is one of expressing a chimeric gene in the plant. The omitted steps are ones involved in getting the chimeric gene into the plant.

11. Claims 1, 4-5, 6-12 and 21-28 are free of the prior art, given the failure of the prior art to teach or suggest an isolated nucleic acid of SEQ ID NO:3.

### *Conclusion*

12. No claim is allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (703) 308-5059. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached at (703) 306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Customer Service at (703) 308-0198.

Anne R. Kubelik, Ph.D.  
December 2, 2002



**AMY J. NELSON, PH.D**  
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